

MEMORIAL ON EVANS' PATENT ♦ BALTIMORE, 1813







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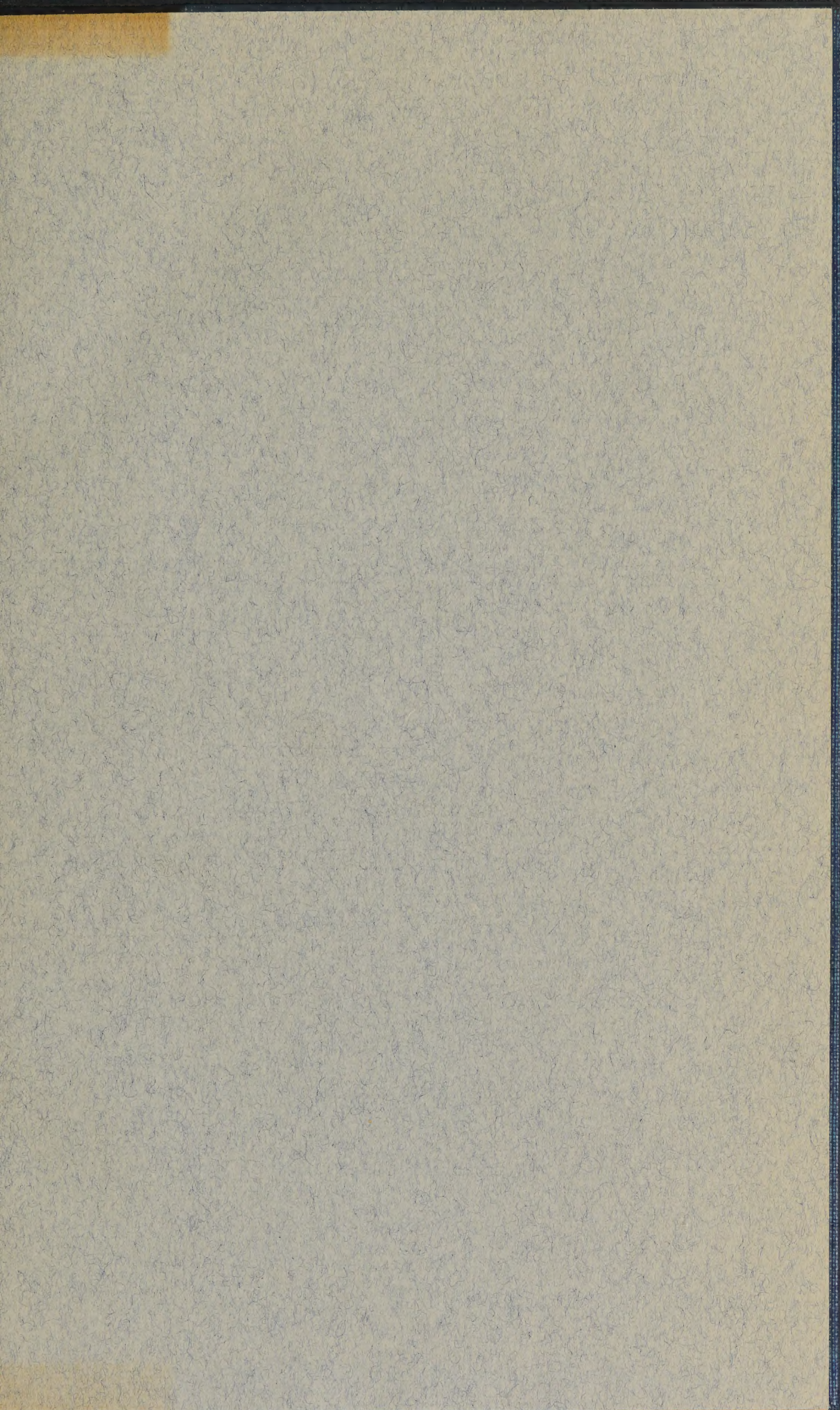
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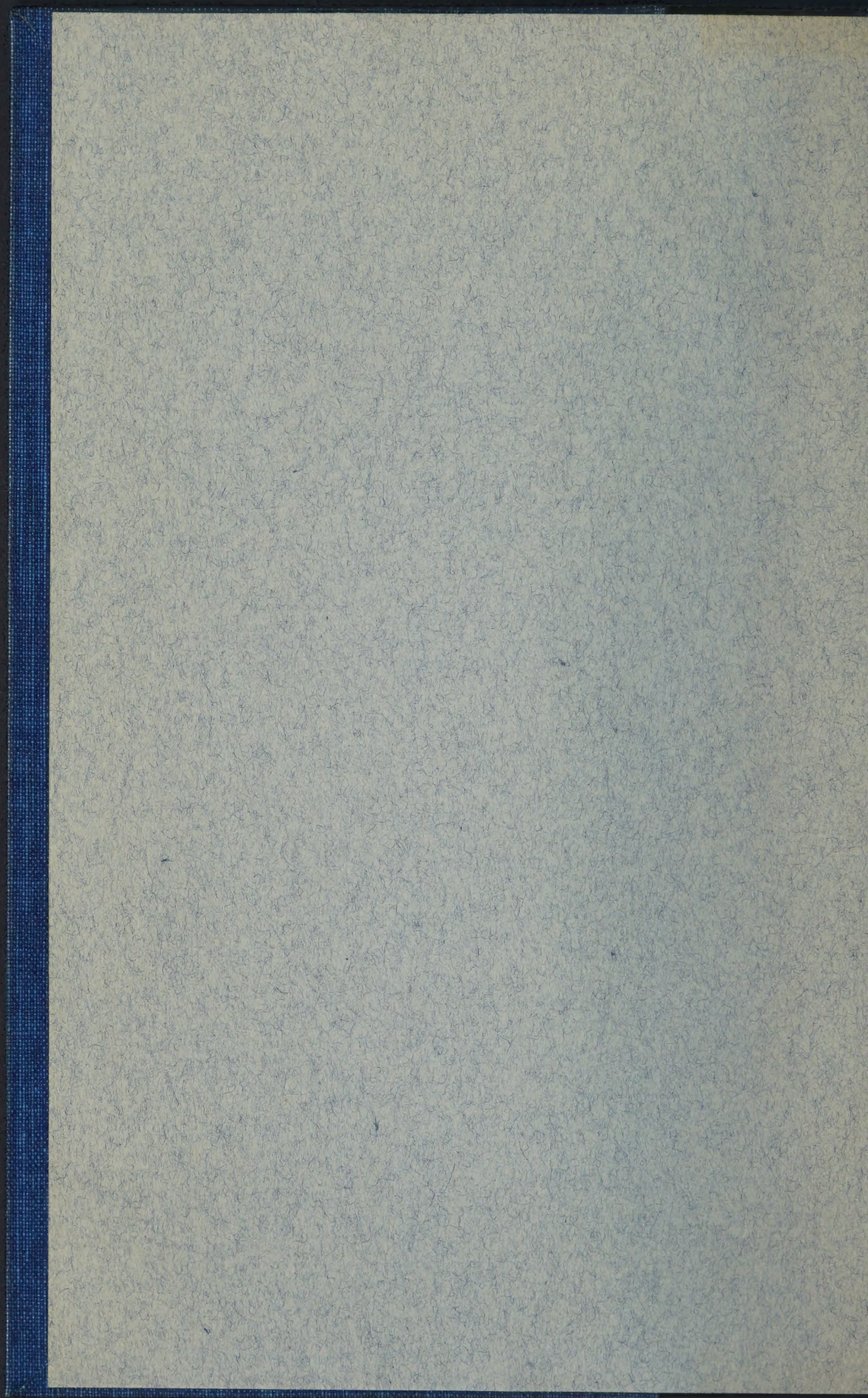
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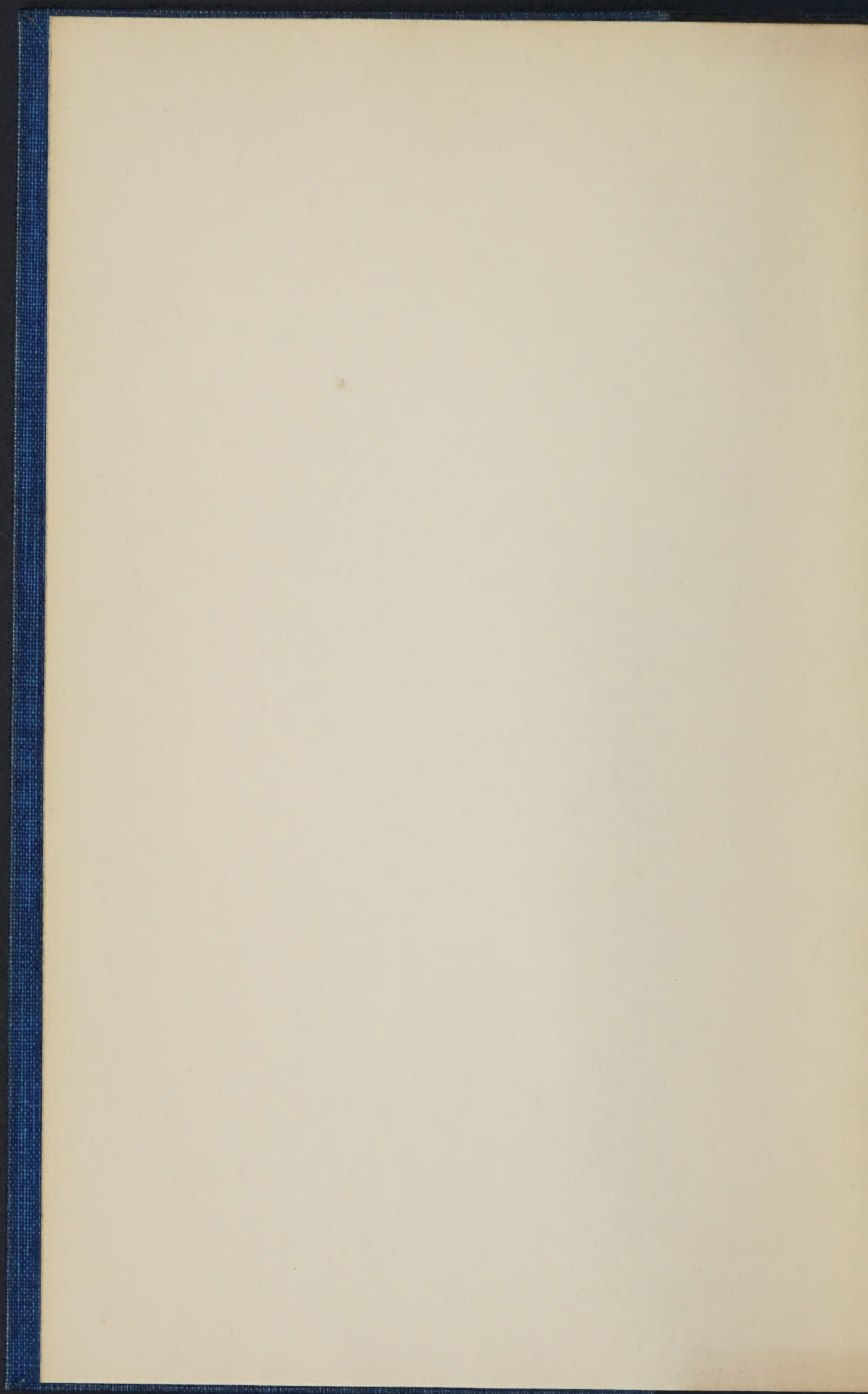
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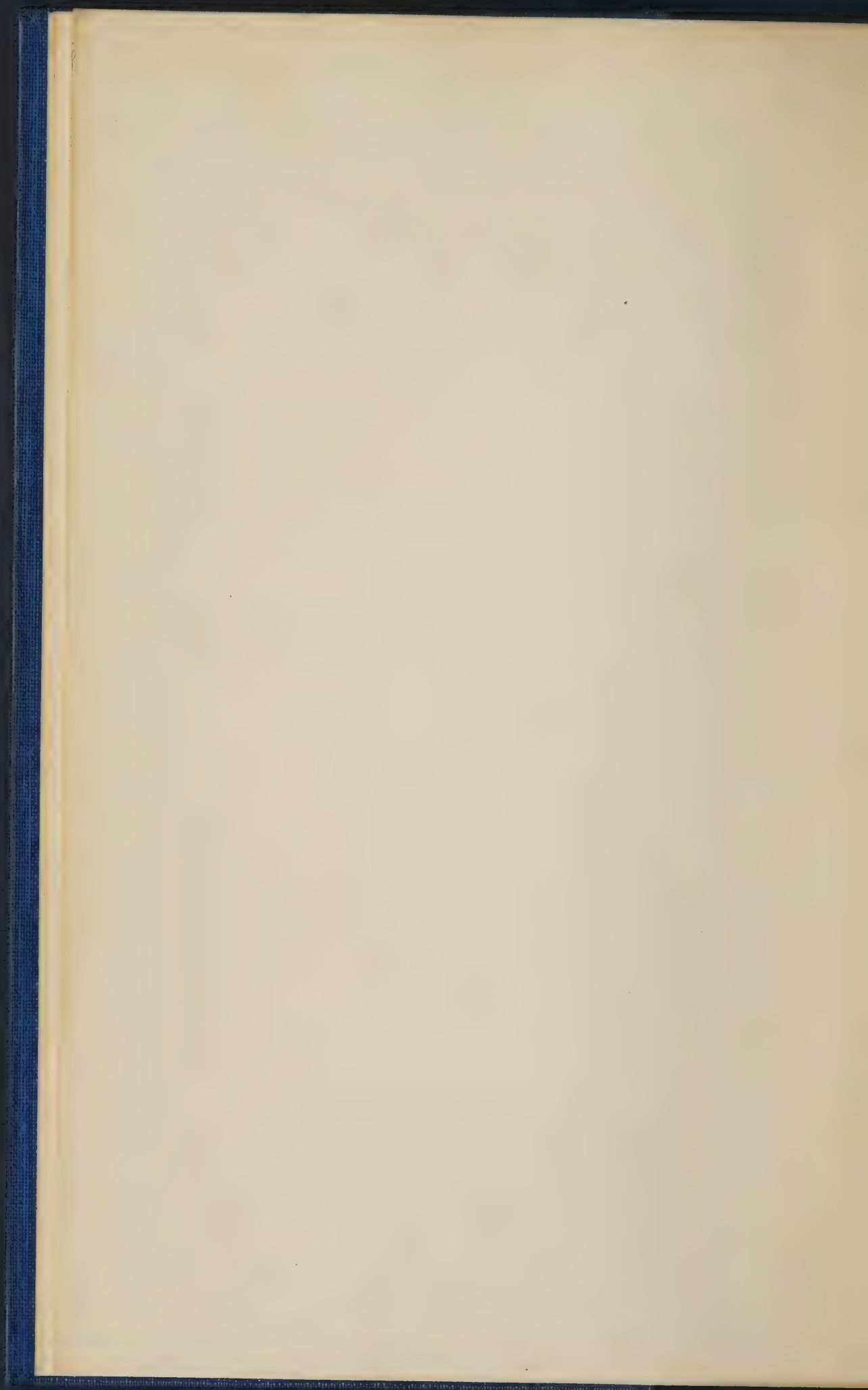


BALTIMORE









MEMORIAL

TO

CONGRESS

OF

SUNDRY CITIZENS OF THE UNITED STATES,

PRAYING RELIEF

FROM THE OPPRESSIVE OPERATION

OF

OLIVER EVANS' PATENT;

Vesting in him an exclusive right to certain Machinery, now in general use, in the Manufacture of Flour ; with evidence to shew that the said Evans was neither the Original Inventor nor first Applier of said Machinery, and consequently not entitled to the reward due to an actual Inventor under the Patent Laws of the United States.

BALTIMORE:

PRINTED BY J. ROBINSON, NO. 96, MARKET-STREET.

1813.



MEMORIAL TO CONGRESS, &c.

*To the Senate and House of Representatives of the
United States.*

THE MEMORIAL OF THE SUBSCRIBERS RESPECTFULLY
SHEWETH :

THAT on the twenty-first day of January, eighteen hundred and eight, your honourable body passed an act, entitled "an act for the relief of Oliver Evans," "there-
"by granting to the said Evans, his heirs, executors, ad-
"ministrators and assigns, for a term not exceeding four-
"teen years, the full and exclusive right and liberty of
"making, constructing, using, and vending to be used,
"his invention, discovery and improvements in the art of
"manufacturing flour and meal, and in the several ma-
"chines which he has discovered, invented, improved and
"applied to that purpose."

That since the passage of said act, and by means thereof, the said Evans has been, and still is, exercising a most grievous oppression over the citizens of the United States ; and, more especially, over those who are immediately engaged in the manufacture of flour.

Your memorialists do not entertain a doubt when congress consented to renew for the further term of fourteen years, the exclusive right of Oliver Evans to the use of what he calls his improvements in the art of milling, that your honourable body were made to believe that he was the original inventor and applier of those machines for which he solicited and obtained a renewal of his patent. In this it will appear your honorable body were deceived, as will be shewn by ample and irrefragible testimony ; nor can your memorialists be persuaded that it was the intention of congress that those persons who erected the machinery before the issuing of a new patent to Mr. Evans, at a time when there was no exclusive right claimed,

should ever be endamaged for continuing its use ; yet, such has been the construction given to the law by Judges Washington and Peters, in Philadelphia, and by Judges Duvall and Houston, in Baltimore. Under the former patent of Mr. Evans he charged a price that would be considered but a fair remuneration to an *actual* inventor for the use of improvements so valuable as the Elevator, Hopper machine and Screw certainly are. He then demanded for a mill containing five pairs of seven feet stones about one hundred and sixty five dollars. He now demands for a mill of the same powers about *three thousand six hundred and seventy-five dollars*—an advance so extravagant does not fail to alarm all those who may fall within the scope of his power, more especially when the demand is accompanied by the fact, that in a suit instituted in the Circuit Court at Baltimore, the sum of eighteen hundred and fifty dollars was awarded to him for damages upon a mill containing one pair of stones and capable of manufacturing twelve barrels of flour only per day.

Your memorialists are aware that the most absurd publications have emanated from the Patentee for the purpose of misleading the public mind, and endeavouring to shew that most enormous profits have arisen to the manufacturer from the use of those improvements ; that there is a great saving of labour your memorialists do not pretend to deny ; but that there can be more flour made from a given quantity of wheat, in consequence of the introduction of labour-saving machinery, the certificates of the most experienced millers will sufficiently disprove. For it must be obvious to every reflecting mind that the mill stones and boulting cloths are the only agents employed in extracting the flour from the grain. These yet remain unembarrassed by the claims of the Patentee.

Your memorialists further beg leave to represent that the said Evans not only claims the exclusive right to the inventions above alluded to, but that he is using the most oppressive and arbitrary means to prevent the introduction of other machinery that may be applied to supersede the Elevators, &c. by commencing vexatious suits against such persons as have invented and applied machinery for

that purpose, and who are unable to encounter the expenses incident to tedious law suits in opposition to a person who is clothed with so invaluable a monopoly as is Mr. Evans.

This fact will appear by a reference to the memorial of Jeremiah Baily, and the letter of Oliver Evans to him, accompanying the documents and evidence which your memorialists are prepared to exhibit.

Your memorialists, therefore, earnestly pray that your honorable body will be pleased to take this subject into your consideration again, and will grant to them such relief as you in your wisdom may think right and proper.



It has been thought proper to select some of the evidence alluded to in the preceding memorial, and to publish it in a pamphlet form, for the greater convenience of exhibiting in a concise manner the basis on which Oliver Evans' claim to originality of invention rests.

It is much to be regretted, that an exhibition of this testimony did not take place at the time of his application for a renewal of his patent; it might then have been the means of saving much trouble and expense to the public, and many individuals from great pecuniary embarrassment, arising from the extravagant demands of the patentee. The very able letter of Thomas Jefferson, Esquire, late President of the United States [No. I] cannot fail to place in a just point of view Mr. Evans' claim to originality in the invention of the Elevators; while the deposition of Samuel Stroud, [II] will shew that he was neither the first inventor nor applier of them to their present use. The depositions of George Roup, Henry Stouffer, and Abram Stouffer, [III] most clearly prove that the Hopper Machine, (or Hopperboy) was in use long before Mr. Evans has pretended to be the inventor of that machine. The depositions of Lewis Evans, John Ellicott and Joseph Evans, [IV] will as clearly shew that he was neither the first inventor nor applier of the Screw or Conveyor, which is so necessary to complete the combination

of what Mr. Evans calls his improvements. The memorial of Jeremiah Baily, [V] with Oliver Evans' letter to him [VI] will shew the means practised to prevent the introduction of improvements that may have a tendency to reduce the value of his monopoly.

The invention of Mr. Baily, though simple in its construction, is intended to answer the purpose of both the Elevator and Conveyor, though neither in form nor principle bearing the smallest resemblance to either, except that it accomplishes the same end.

It is then a question, how Oliver Evans has been enabled to impose on the public for so long a time with his patent rights, which can only be answered by supposing the inconsiderable price demanded under his first patent was paid him, rather than incur the trouble and expense of a judicial inquiry into the validity of his claim. The enormous sums demanded since the renewal of his patent in 1808, [VII] has induced an inquiry whether so intolerable a burthen cannot justly be thrown from the shoulders of the community. This subject was last winter before the Senate of the United States, and partially acted upon; but, as will appear by the report of their committee [VIII] the late period in the session at which it was taken up, was the reason why it was not fully investigated.

The reason why it has been thought necessary by the patentee to make and publish numerous calculations, to shew the great profits arising to the manufacturers of flour from the use of his pretended inventions, is an enigma not easily to be solved. If he is seriously of the opinion that they are founded in truth, the most credulous will not suppose their author capable of inventing the numerous improvements that he claims. If he knows them to be erroneous, what other object can he have in view than to prejudice the public mind, and thereby render it more difficult to defeat his pretensions by a legal inquiry. It is a fact, well known to every experienced miller in the United States, that the profits of the manufacturers of flour are not so great now as they were before the introduction of the Elevator, &c. owing to the num-

ber of mills having increased in a ratio greater than the growth of grain ; and the certificate of some of the most skilful millers [IX] will sufficiently prove, that more flour cannot be made from a given quantity of wheat by the use of the modern improvements than can be without them. Were the use of labour-saving machinery confined to a few persons only, much would be saved to them from that source ; but when it is as common in mills as the water wheels that work them, can it be believed that any profit can arise that would not, if no such machinery were in general use ? So long as the number of mills are more than sufficient to manufacture all the grain raised, the competition amongst purchasers will necessarily keep the price so high, that a bare profit only will be left to the manufacturer, while the farmer will, from the competition, reap the benefit that arises from the improvements, by obtaining an advanced price for his produce.

That the subject of Mr. Evans' claim may rest upon its merits only, the documents and evidence are submitted without further comment.

No. I.

Monticello, August 13th, 1813.

SIR,

YOUR letter of August 3d, asking information on the subject of Mr. Oliver Evans's exclusive right to the use of what he calls his Elevators, Conveyers and Hopperboys, has been duly received. My wish to see new inventions encouraged, and old ones brought again into useful notice, has made me regret the circumstances which have followed the expiration of his first patent. I did not expect the retrospection which has been given to the reviving law ; for although the second proviso seemed not so clear as it ought to have been, yet it appeared susceptible of a just construction ; and the retrospective one being contrary to natural right, it was understood to be a rule of law, that where the words of a statute admit of two constructions, the one just and the other unjust, the

former is to be given them. The first proviso takes care of those who had lawfully used Evans' improvements under the first patent; the second was meant for those who had lawfully erected and used them after that patent expired, declaring they "should not be liable to damages therefor." These words may indeed be restrained to uses already past; but as there is parity of reason for those to come, there should be parity of law. Every man should be protected in his lawful acts, and be certain that no *ex post facto* law shall punish or endamage him for them. But he is endamaged if forbidden to use a machine lawfully erected at considerable expense, unless he will pay a new and unexpected price for it. The proviso says, that he who erected and used lawfully shall not be liable to pay damages: but if the proviso had been omitted, would not the law, construed by natural equity, have said the same thing? In truth, both provisos are useless. And shall useless provisos, inserted *pro majori cautela*, only authorise inferences against justice? The sentiment that *ex post facto* laws are against natural right is so strong in the United States, that few, if any, of the state constitutions have failed to proscribe them. The federal constitution indeed interdicts them in criminal cases only; but they are equally unjust in civil as in criminal cases; and the omission of a caution which would have been right does not justify the doing what is wrong; nor ought it to be presumed, that the legislature meant to use a phrase in an unjustifiable sense, if by any rules of construction it can be even strained to what is just. The law books abound with similar instances of the care the judges take of the public integrity. Laws moreover abridging the natural rights of the citizen should be restrained by rigorous constructions within their narrowest limits.

Your letter, however, points to a much broader question, whether what have received from Mr. Evans the new and the proper name of Elevators are of his invention: because, if they are not, his patent gives him no right to obstruct others in the use of what they possessed before. I assume it as a lemma, that it is the invention of the machine itself which is to give a patent right, and not the application of

it to any particular purpose of which it is susceptible. If one person invents a knife convenient for pointing our pens, another cannot have a patent right for the same knife to point our pencils. A compass was invented for navigating the sea; another could not have a patent right for using it to survey land. A machine for threshing *wheat* has been invented in Scotland; a second person cannot get a patent right for the same machine to thresh *oats*; a third *rye*; a fourth *peas*; a fifth *clover*, &c. A string of buckets is invented and used for raising water, ore, &c. can a second have a patent right to the same machine for raising wheat, a third oats, a fourth rye, a fifth peas, &c.? The question then whether such a string of buckets was invented first by Oliver Evans, is a mere question of fact in mathematical history. Now turning to such books only as I happen to possess, I find abundant proof that this simple machinery has been in use from time immemorial. Doctor Shaw, who visited Egypt and the Barbary coast, in the years 1727—8, 9, in the margin of his map of Egypt, gives us the figure of what he calls a Persian wheel, which is a string of round cups, or buckets, hanging on a pulley, over which they revolve, bringing up water from a well, and delivering it into a trough above. He found this used at Cairo, in a well 264 feet deep, which the inhabitants believe to have been a work of the patriarch Joseph. Shaws Travels, 341 Oxford edition of 1738, in folio, and the Universal History, I. 416 speaking of the manner of watering the high lands in Egypt, says—"Formerly they made use of Archimedes' Screw, thence named the Egyptian Pump; but they now generally use Wheels (Wallowers) which carry a rope or chain of earthen pots, holding about 7 or 8 quarts a piece, and draw the water from the canals. There are besides, a vast number of wells in Egypt, from which the water is drawn in the same manner to water the gardens and fruit trees; so that it is no exaggeration to say, that there are in Egypt above 200,000 oxen daily employed in this labour." Shaw's name of Persian wheel has been since given more particularly to a wheel with buckets, either fixed or suspended on pins at its periphery.—Mortimer's

Husbandry, I. 18, Duhamel, V. Ferguson's *Mechanics*, plate 13. But his figure, and the verbal description of the *Universal History*, prove, that the string of buckets is meant under that name. His figure differs from Evans' construction in the circumstances of the buckets being round, and strung through their bottom on a chain; but it is the principle; to wit, a string of buckets, which constitutes the invention, not the form of the buckets, round, square or hexagon; nor the manner of attaching them, nor the material of the connecting band, whether chain, rope or leather. Vitruvius, L. X. c. 9, describes this machinery as a windlass, on which is a chain descending to the water, with vessels of copper attached to it; the windlass being turned, the chain moving on it will raise the vessels, which, in passing over the windlass, will empty the water they have brought up into a reservoir: and Perrault, in his edition of Vitruvius, Paris, 1684, folio, plates, 61, 62, gives us three forms of these water elevators, in one of which the buckets are square, as Mr. Evans' are. Bossut, *Histoire des Mathematiques*, I. 86, says, "The drum wheel, the wheel with buckets, and the *chapelets*, are hydraulic machines, which come to us from the ancients; but we are ignorant of the time when they began to be put into use." The *chapelets* are the revolving band of buckets, which Shaw calls the Persian wheel, the moderns a chain pump, and Mr. Evans elevators. The next of my books, in which I find these elevators, is Wolf's *Cours de Mathematiques*, I. 370, and plate 1, Paris, 1747—8vo. Here are two forms; in one of them the buckets are square, attached to two chains, passing over a cylinder or wallower at top, and under another at bottom, by which they are made to revolve. It is a nearly exact representation of Evans' elevators. But a more exact one is to be seen in Desagulier's *Experimental Philosophy*, II. plate 34. In the *Encyclopedie de Diderot et D'Alembert* 8vo. edition de Lausanne, 1st vol. of plates, in the four subscribed *Hydraulique*, *noria*, is one, where round earthen pots are tied by their collars, between two endless ropes, suspended on a revolving lantern or wallower; this is said to have been used for raising ore out

of a mine. In a book which I do not possess, "*L'Architecture Hydraulique de Belidor*, the II vol. of which is said [De La Lande's continuation of Montucla's *Histoire des Mathematiques*, III. 711] to contain a detail of all the pumps, ancient and modern, hydraulic machines, fountains, wells, &c. I have no doubt this Persian wheel, chain pump, chapelets, elevators, by whichever name you choose to call it, will be found in various forms. The last book I have to quote for it is Proney's *Architecture Hydraulique*, I. advertisement VII. and § 648, 649, 650, in the latter of which passages he observes, that the first idea which occurs for raising water is to lift it in a bucket by hand; when the water lies too deep to be reached by hand, the bucket is suspended by a chain and let down over a pulley or windlass: if it be desired to raise a continued stream of water, the simplest means which offers itself to the mind is to attach to an endless chain or cord a number of pots or buckets, so disposed that the chain being suspended on a lantern or wallower above, and plunged in water below, the buckets may descend and ascend alternately, filling themselves at bottom, and emptying at a certain height above, so as to give a constant stream. Some years before the the date of Mr. Evans' patent, a Mr. Martin of Caroline county, in this state, constructed a drill plough, in which he used the band of buckets for elevating the grain from the box into the funnel which let them down into the furrows:* he had bands with different sets of buckets, adapted to the size of peas, of turnip seed, &c. I have used this machine for sowing benni seed also, and propose to have a band of buckets for drilling Indian corn, and another for wheat. Is it possible that in doing this I shall infringe Mr. Evan's patent? That I can be debarred of any use to which I might have applied my drill when I bought it by a patent issued after I bought it.

These verbal descriptions applying so exactly to Mr. Evans' Elevators, and the drawings exhibited to the eye, flash conviction both on reason and the senses that there is nothing new in these elevators but their being strung together by a strap of leather. If this strap of leather be an invention entitling the inventor to a patent right, it can on-

* See the depositions of Mrs. Martin and Charles Lathom, No. X. and XI.

ly extend to the strap, and the use of the string of buckets must remain free to be connected by chains, ropes, a strap of hempen girthing, or any other substance except leather; but indeed Mr. Martin had before used the strap of leather.

The screw of Archimedes is as ancient at least as the age of that mathematician, who died more than 2000 years ago. Diodorus Siculus speaks of it, lib 1, page 21, and lib 5, page 217, of Stevens' edition of 1559, folio, and Vitruvius, X. 11. The cutting of its spiral worm into sections, for conveying flour or grain, seems to have been an invention of Mr Evans,' and to be a fair subject of a patent right, but it cannot take away from others the use of Archimedes' screw, with its perpetual spiral, for any purposes of which it is susceptible.

The Hopperboy is an useful machine and as far as I know original.*

It has been pretended by some (and in England especially) that inventors have a natural and exclusive right to their inventions; and not merely for their own lives, but inheritable to their heirs: but while it is a moot question, whether the origin of any kind of property is derived from nature at all, it would be singular to admit a natural, and even an hereditary right to inventions. It is agreed by those who have seriously considered the subject, that no individual has, of natural right, a separate property in an acre of land: for instance, by an universal law, indeed, whatever, whether fixed or moveable, belongs to all men equally and in common, is the property for the moment of him who occupies it; but when he relinquishes the occupation the property goes with it. Stable ownership is the gift of social law, and is given late in the progress of society: it would be curious then if an idea the fugitive fermentation of an individual brain, could of natural right be claimed in exclusive and stable property. If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea; which an individual may exclusively possess

* The enlightened author was not apprised of the depositions contained in No. III. where the evidences are so conclusive against Mr. Evans on the subject of the Hopper-boy. EDITOR.

as long as he keeps it to himself, but the moment it is divulged it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character too is that no one possesses the less because every other possesses the whole of it. He who receives an idea from me receives instruction himself without lessening mine ; as he who lights his taper at mine receives light without darkening me. That ideas should freely spread from one to another over the globe for the moral and mutual instruction of man, and improvement of his condition seems to have been peculiarly and benevolently designed by nature when she made them, like fire, expansible over all space, without lessening their density in any point ; and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot in nature be a subject of property. Society may give an exclusive right to the profits arising from them as an encouragement to men to pursue ideas which may produce utility. But this may or may not be done according to the will and convenience of the society, without claim or complaint from any body. Accordingly it is a fact, as far as I am informed, that England was, until we copied her, the only country on earth which ever by a general law gave a legal right to the exclusive use of an idea. In some other countries it is sometimes done in a great case and by a special and personal act ; but generally speaking other nations have thought that these monopolies produce more embarrassment than advantage to society ; and it may be observed that the nations which refuse monopolies of inventions are as fruitful as England in new and useful devices.

Considering the exclusive right to invention as given, not of natural right, but for the benefit of society, I know well the difficulty of drawing a line between the things which are worth to the public the embarrassment of an exclusive patent and those which are not. As a member of the patent board for several years, while the law authorised a board to grant or refuse patents, I saw with what slow progress a system of general rules could be matured. Some however were established by that board.—

One of these was that a machine of which we were possessed, might be applied by every man to any use of which it is susceptible, and that this right ought not to be taken from him and given to a monopolist, because he first perhaps had occasion so to apply it. Thus a screw for crushing plaister might be employed for crushing corn cobs, and a chain pump for raising water might be used for raising wheat—this being merely a change of application. Another rule was that a change of material should not give title to a patent, as the making a plough share of cast rather than of wrought iron; a comb of iron instead of horn or of ivory, or the connecting of buckets by a band of leather rather than of hemp or iron. A third was, that a mere change of form should give no right to a patent; as a high quartered shoe instead of a low one, a round hat instead of a three square, or a square bucket instead of a round one; but for this rule all the changes of fashion in dress would have been under the tax of patentees. These were among the rules which the uniform decisions of the board had already established; and under each of them Mr. Evans' patent would have been refused. 1st, Because it was a mere change of application of the chain pump from raising water to raise wheat. 2d, Because the using a leathern instead of a hempen band was a mere change of material: and 3rdly, square buckets instead of round, are only a change of form; and the ancient forms too appear to have been indifferently square or round. But there were still abundance of cases which could not be brought under rule, until they should have presented themselves under all their aspects; and these investigations occupying more time of the members of the board, than they could spare from higher duties, the whole was turned over to the judiciary, to be matured into a system under which every one might know when his actions were safe and lawful. Instead of refusing a patent in the first instance, as the board was authorised to do, the patent now issues of course, subject to be declared void on such principles as should be established by the courts of law. This business however is but little analogous to their course of reading, since we might in vain turn over all the lubberly volumes of the law to find a single ray which would lighten

the path of the mechanic or mathematician ; it is more within the information of a board of academical professors, and a previous refusal of a patent would better guard our citizens against harrassment by law suits. But England had given it to her judges, and the usual predominancy of her examples carried it to ours.

It happened that I had myself a mill built in the interval between Mr. Evan's first and second patents. I was living in Washington, and left the construction of the mill entirely to the mill wright. I did not even know he had erected elevators, conveyors and hopperboys, until I learnt it by an application from Mr. Evans' agent for the patent price. Although I had no idea he had a right to it by law (for no judicial decision had then been given) yet I did not hesitate to remit to Mr. Evans the old and moderate patent price, which was what he then asked, from a wish to encourage even the useful revival of ancient inventions. But I then expressed my opinion of the law in a letter either to Mr. Evans or to his agent.

I have thus, sir, at your request given you the facts and ideas which occur to me on this subject. I have done it without reserve, although I have not the pleasure of knowing you personally. In thus frankly committing myself to you, I trust you will feel it as a point of honour and candour to make no use of my letter which might bring disquietude on-myself ;* and particularly I should be unwilling to be brought into any difference with Mr. Evans, whom, however, I believe too reasonable to take offence at an honest difference of opinion. I esteem him much and sincerely wish him wealth and honour. I deem him a valuable citizen of uncommon ingenuity and usefulness ; and had I not esteemed still more the establishment of sound principles I should now have been silent. If any of the matter I have offered can promote that object, I have no objection to its being so used. If it offers nothing new, it will of course not be used at all.

I have gone with some minuteness into the mathematical history of the elevator, because it belongs to a branch

* It is proper to observe, that though the author did not at the time of writing this letter, contemplate its publication, yet his permission has been obtained.

of science, in which, as I have before observed, it is not incumbent on lawyers to be learned; and it is possible, therefore, that some of the proofs I have quoted, may have escaped on their former arguments. On the law of the subject I should not have touched, because more familiar to those who have already discussed it, but I wished to state my own view of it merely in justification of myself; my name and approbation being subscribed to the act. With these explanations, accept the assurances of my respect.

TH: JEFFERSON.

No. II.

This is to certify that I the subscriber in company with William Marshall occupied the upper mill at Stanton, in the year 1785 or 1786, and in the early part of that year did erect a sett of Elevators and Hopper-boy which we kept at work several years, that at the time of erecting this Machinery *I had no knowledge or belief of any of the kind being erected in the United States or elsewhere*, and that after the said Machinery had been at work some time *Oliver Evans called at the mill to see it and said that he had planned in his head a similar sett and appeared much pleased with the operation of them.* That the said Oliver had nothing of the kind at work at this time nor for a considerable length of time afterwards, that I knew of, and that *the said Oliver resided about two and an half miles from our mill*, and that I never saw any thing of the kind at work in his mill for more than a year after we had the Elevators and Hopper-boy at work. Our Hopper-boy was not exactly like the one now in use, but it was upon the same principle. That it was an upright shaft revolving round with an arm extended with flights to draw the meal towards the Hopper; that one end of it was fastened in the shaft, the other raised up to fill the meal round it, and as it drew the meal into the Hopper it lowered. And I am confident that at the time Oliver Evans applied for the patent right of machinery, had we thought it an object worthy our attention, we could have prevented him from obtaining his patent, as the Legislature of this State would

not grant a patent, knowing that we were the inventors, and in the law the said mills were exempt, and we could have had a patent right secured ourselves. That it was generally allowed by the people of the neighborhood that we were the inventors of the Elevators, &c. and that the said Oliver Evans did not receive any pay from me for his patent right. That the first idea of the Elevators originated with James Stroud, seeing a band turning a rolling screen on which a buckle was fixed, and as it revolved round, the buckle caught grains of wheat at the bottom and throw'd them over at the top; he then mentioned that by putting buckets on the said straps it would raise wheat or flour to any distance he would choose and empty it at the top. And that they did immediately erect an Elevator on that plan, which is the one now in use, and I believe that no improvement has been made since.

Witness my hand, January 5th. 1813.

SAMUEL STROUD.

Before me, Edward Roche, esquire, Notary and Tabeilion Public for the State of Delaware, duly commissioned and authorized, residing in the borough of Wilmington, on this fifth day of January, 1813, personally came Samuel Stroud, of said borough, merchant, and on his solemn affirmation, duly administered, affirmed and declared that the facts mentioned in the preceding certificate, signed and subscribed by him, are correct and true.

In testimony whereof, I have hereunto set my hand and affixed my Notarial Seal, January 5th, 1813.

EDWARD ROCHE.

We the subscribers, undermentioned, do certify, that the annexed statement, made and subscribed by Samuel Stroud, is to the best of our knowledge and belief, just and true, and that notwithstanding our having heretofore given to Oliver Evans our depositions relative to the said invention: do hereby declare, upon mature reflection and consideration, and say that the said deposition of *Samuel Stroud* is to the best of our knowledge correct. The

reason that we have said Oliver Evans was the inventor of that machinery, was, *that the said Oliver Evans told us so, and we declared we had no further evidence of it*; that as to the Hopper-boy in Marshall and Stroud's mill, Oliver Evans never claimed to be the inventor of the first motion.

Witness our hands January 5th, 1813.

JAMES STROUD,
EDWARD MARSHALL.

See page 29.

No. III.

In the Circuit Court of the United States, in and for the District of Pennsylvania, in the third Circuit.

OLIVER EVANS

vs.

BENJAMIN CHAMBERS, *Gentleman*,

} Sums Case,
No. 19, April,
1804.

And now to wit, this twenty-third day of December, A. D. 1805,

ORDERED—That the depositions of witnesses, as well on the part of the plaintiff as of the defendant, be taken and read in evidence on the trial of this cause, in case of the death, absence or inability of such witness to attend court upon the trial of this cause.

RULE—That if either of the parties neglect or refuse to attend at the taking of the depositions, on fifteen day's notice, the depositions may be taken *ex parte*.

A true copy,

D. CALDWELL, *Clk. Circ. Ct.*

The annexed depositions were taken before me this eleventh day of January, 1806, in pursuance of the rule of court, at the house of Thomas Hetich, in Chambersburg.

Witness my hand and seal the day and year above.

J. MAXWELL, *Seal.*

To the honourable Judges, }
of the Circuit Court. }

CIRCUIT COURT.

Evans } Interrogatories to be put to the witnesses
vs. } who may be examined on the part of defen-
 Chambers. } dant.

Inter. 1. What is your age, profession or employment ?

Inter. 2. How long have you known the mill belonging to defendant ? When did you examine it, and who was present ?

Inter. 3. Describe, particularly, the machinery of the mill belonging to defendant in respect to which this action is brought.

Inter. 4. If you have seen a Hopper-boy, in use in any mill before the year 1786, describe the same particularly, and answer the following questions :

1st. Was such Hopper-boy so constructed that the arm, which played on the meal, would rise of itself, as well as lower itself, to suit any quantity of meal that might be thrown under it.

2d. Were the arms or arm which played on the meal led round by cords or leading lines which were made fast at their ends, and also fast to another arm which was made fast to the upright shaft near the upper end ?

3d. Was the under side of the arm set with little inclining boards which turned up the meal to expose it to the air to cool and gather it at the same time into the bolting hopper ?

4th. Was the arm balanced by a weight which hung to the end of a cord passing over a pully at the upper end of the upright shaft to make it play lightly on the meal, in order that it might require little force to turn it and to make it rise over the meal of itself as the miller shoveled it up in a heap round the bolting hopper, or as the meal should fall from the elevator without stopping the motion of the hopper-boy ?

Inter. 5. Do you know the plaintiff ? How long have you known him ? Did you ever see him working at any

mill in Lancaster countiy?—If yea, mention precisely in what year ; and what particular mill he was working at.

W. RAWLE, for Pl'ff.

Oliver Evans,

vs.

Benj. Chambers, gentleman.

In the Circuit Court of the United States in and for the District of Pennsylvania, in the Third Circuit. Sum's. Case, No. 19, April, 1804.

Franklin County,

Pennsylvania, set.

On this eleventh day of January, in the year of our Lord one thousand eight hundred and six, before me, one of the Associate Judges of the Court of Common Pleas, in and for Franklin County, in Pennsylvania, at the House of Tho's Hetick, in Chambersburg, appeared Geo. Roupe, burr-mill-stone-maker, who being by me legally affirmed to tell the truth, the whole truth, and nothing but the truth between the parties in the above cause, doth say : that he is aged forty-nine years and upwards, and formerly a mill-wright, and now a burr-mill-stone-maker ; that this affirmant, in the year one thousand seven hundred and eighty-five, or very early in the year eighty-six, built a mill for George Fry and Jehu Hollingsworth, in Dauphin county, in this state, wherein he put a Hopper machine, calculated to convey the flour to feed the bolt ; that he believes that two years before this, he put one in Brineman's mill, that the only difference between the Hopper machine made by this affirmant and put up in Fry's mill and the Hopper-boy in Benjamin Chambers' mill, is this, that the Hopper-boy is supported by weights to prevent it from sinking too deep into the flour ; and the Hopper machine made by affirmant was shorter in the boards underneath that collect in the flour to the centre ; the cross piece in the Hopper-boy in captain Chambers's mill is long and straight, and the cross piece in the Hopper machine, made and put up as aforesaid, was put in the form of an S, but, that the geers, necessary to work both, are precisely the same, and the principle mechanically the very same.

On part of Plaintiff:

In answer to the First Interrogatory affirmant says, that he has already answered the same in a former part of his deposition.

In answer to the Second Interrogatory, affirmant says, that he has lived in Chambersburg three years, during which time he has known the mill of Benjamin Chambers.—That this week he examined the said mill, no one present.

In answer to the Third Interrogatory, affirmant says, that there is an upright shaft, a cross piece with the shovels fastened on them, and works by the bolting geers.

In answer to the Fourth Interrogatory, affirmant says, that he does not recollect to have ever seen a Hopper-boy in operation before the year one thousand seven hundred and eighty-six. The Hopper machine, affirmant made for George Fry and Jehu Hollingsworth, as aforesaid, he did not see in operation for sometime after the mill was finished, as the race was not dug entirely before she was finished.

In answer to the First Interrogatory, affirmant says, that he regulated the motion of his Hopper machine by shortening the teeth to give it feed, and when it had too little, by throwing unbolted flour on the arms.

In answer to the Second Interrogatory, affirmant says, that the Hopper machine made and put up by him at Fry and Hollingsworth's, was fastened in a square shaft and not led round by cords.

In answer to the Third Interrogatory, affirmant says, that the Hopper machine he made and put up in Fry and Hollingsworth's mill, differs only from the Hopper-boy in Benjamin Chambers' mill in this, that affirmant nailed on the under side of the cross piece small strips of boards—that the Hopper-boy has small pieces of boards or shovels sawed in the cross piece, but the effects produced by both are the very same.

In answer to the Fourth Interrogatory, affirmant says, that he had no balance to his Hopper machine, except as

before stated in answer to first interrogatory, which balance he always found to answer the end.

In answer to the Fifth Interrogatory, affirmant replies, that he knows Oliver Evans—I have known him about three years since. I never saw him at work at any mill in Lancaster county or elsewhere. And further saith not.

GEORGE ROUPE.

Affirmed and Subscribed before me, 11th }
January, 1806. }

J. MAXWELL.

Oliver Evans

vs.

Benjamin Chambers, gentleman. } In the Circuit Court
of the United States,
in and for the District
of Pennsylvania in the Third Circuit. Sums. Case No.
19. April, 1804.

Franklin County,

State of Pennsylvania, sct.

On this eleventh day of January in the year of our Lord one thousand eight hundred and six, appeared before me, one of the Associate Judges of the Court of Common Pleas, in and for Franklin County, in Pennsylvania, at the house of Thomas Hetick in Chambersburg, Henry Stouffer, of said county, now a Farmer and formerly a miller, aged fifty-four years, who, being, by me, legally affirmed to testify the truth, the whole truth, and nothing but the truth in the above stated cause, doth depose as follows : That between thirty-five and forty years ago, Christian Stouffer, the brother of this deponent, invented and made a Machine to feed the Bolting Chests in the Mill of deponent's father, Jacob Stouffer, who then lived in Warwick township, Lancaster county ; that in the year one thousand seven hundred and seventy-five, this deponent bought a mill of Thomas Usher, near York-town, in Pennsylvania, that at that time there was no machine in her to feed the bolts, but that this deponent got his brother Daniel Stouffer, in that year, to erect one similar to the machine that was in his father's mill. That this deponent has this

morning viewed the machine in the mill of the defendant of which the Plaintiff complains, and is decidedly of opinion that it does in no particular differ in principle from the machinery for feeding the bolts above stated by him, and in use as aforesaid ; there is some difference in the length, but its movements are governed and directed by the same mechanical principle ; that this deponent saw the same kind of machine in use and operation in the mill of John Stouffer, deponent's brother in York county as aforesaid, about the year one thousand seven hundred and seventy-five.

In answer to the First Interrogatory on part of Plaintiff, Henry Stouffer answers as follows :

1st. That deponent is now fifty-four years of age, now a farmer, but formerly a miller.

Answer to the Second Interrogatory says, that he has resided in this county near Chambersburg about three years, during which time he has known defendant had a mill in said town, that he examined it this morning by himself.

Answer to the Third Interrogatory says, that it is worked by an upright shaft, on which is a large wheel and works in the bolting geers ; that there is a cross piece of wood which lies on the flour and collects it to the centre to feed the bolt.

Answer to the Fourth Interrogatory says, that the machine, which he has mentioned in the body of his deposition, and which was in use in the year one thousand seven hundred and seventy-five, was not called by the name of a Hopper-boy, but was called a Hopper Machine ; and in answer to the first question arising out of the fourth interrogatory says, that the Hopper Machine which he knew in use, as above stated, would lower itself to suit any quantity of flour that might be thrown under it, but that its own weight kept it down.

To the Second Interrogatory, deponent says, that the Hopper Machine invented and made by his brother Christian, was worked with cords as stated in the interrogatory ; but that the one used by deponent near York-town had no

cords, deponent believing they were of no use and the machine was better without them.

To the Third Interrogatory, deponent says, that there were cross pieces nailed on the under side of the machines by him before stated to be used to convey, and that did well convey the flour to the centre, but not exactly like the one made by plaintiff, but answered the same end.

Answer to the Fourth Interrogatory says, that the Hopper machine before mentioned by him was balanced by weights to regulate its motions ; that in using it he sometimes hung heavy and sometimes lighter weights, as the machine required, to enable it to perform.

In answer to the Fifth Interrogatory, deponent says, that he has seen Oliver Evans about fourteen years since ; that said Evans slept with deponent at deponent's brother's, in Montgomery township, Lancaster county ; never saw him at work in any mill in Lancaster county ; that said Evans at that time went with deponent through deponent's brother's mill, where there was a Hopper machine as before described to have been used thirty-five years since, that Evans there saw it, and that it was similar to Benjamin Chambers's machine, for which deponent understands he is sued by Oliver Evans : that the Machine in deponent's brother's mill, which Mr. Evans saw, was made upwards of thirty years since, and that Oliver Evans only then offered for sale to his brother the Elevators and said nothing about the Hopper-boy. And further saith not.

HENRY STOUFFER.

Affirmed and Subscribed before me, 11th }
January, 1806. }

J. MAXWELL.

Oliver Evans,
vs.
 Benjamin Chambers. } In the Circuit Court of the United
 States, for the District of Pennsyl-
 vania, in the third Circuit.

Franklin County,
Pennsylvania, ss.

On this eleventh day of January, eighteen hundred and six, before me, one of the Associate Judges of the Court of Common Pleas, of Franklin County, in Pennsylvania, appeared Edward Crawford, Esquire, Prothonotary of Franklin County, who being by me legally sworn, doth say that he has been acquainted with Abraham Stouffer twelve or thirteen years, with Henry Stouffer about twenty-two years, and with George Roupe about two years; that they are all men of property, and as far as deponent knows, believes, and has been informed, men of honesty and truth. And further saith not.

EDWD. CRAWFORD.

Sworn and subscribed before me }
 11th January, 1806. }
 J. MAXWELL.

Oliver Evans,
vs.
 Benjamin Chambers, gentleman, } In the Circuit Court of
 the United States in and
 for the District of Penn-
 sylvania, in the third Circuit. Sums Case, No. 19, April,
 1804.

Franklin County,
Pennsylvania, ss.

On this eleventh day of January, in the year of our Lord, one thousand eight hundred and six, appeared before me, one of the Associate Judges in and for Franklin County, in Pennsylvania, at the house of Thomas Hetich, in Chambersburg, Abraham Stouffer, of said county, farmer, aged fifty-nine years and upwards, who being by me legally affirmed to testify the truth, the whole truth, and nothing but the truth, in the above stated cause, doth depose as follows:—That between thirty-five and forty years since, Christian Stouffer invented and made a machine to feed the bolting chests, called then a hopper machine, in

the mill of deponent's father, in Warwick township, Lancaster County—That this deponent built a mill in Maryland, upwards of twenty years ago, that he put in her a hopper machine similar in every part to the one made by Chris'n Stouffer as aforesaid—That deponent saw the same machine in use and operation in John Stouffer's mill and Jacob Stouffer's mill (that said John Stouffer lives near York-town) in the year one thousand seven hundred and seventy-seven or eight. That deponent has seen the hopper-boy in the mill of Benjamin Chambers, and is decidedly of opinion that it does, in no essential particular, differ from the same kind of machine that deponent knew to be used thirty-five or forty years since for the same purpose, and that it is governed by the same mechanical principle, and that the difference lies in some trifling particulars. That Oliver Evans waited on deponent in Maryland after he had his patent, and only proposed to sell him the elevators, and did not then claim the hopper-boy of deponent, although he saw it then in use in his mill.

In answer to the first interrogatory, put by the plaintiff, affirmant answers, that he is upwards of fifty-nine years of age, a farmer.

In answer to the second interrogatory, affirmant says, that he has resided in this county, one mile from Chambersburg, upwards of thirteen years, that he has known Benjamin Chambers' mill about six years—he has not examined since about a year.

In answer to the third interrogatory affirmant says, that it is worked by an upright shaft on which is a large wheel and works in the bolting geers—that there is a cross piece of wood which lies on the flour and collects it to the centre to feed the bolt.

In answer to the fourth interrogatory affirmant says, that the machine which he has mentioned in the body of his deposition, and which was in use about thirty-five or forty years ago, was not called a "hopper-boy" but was called a hopper machine; and in answer to the first question, arising out of the fourth interrogatory, says, that the hopper machine which he knew in use, as above stated, would lower itself to suit any quantity of flour that might be thrown under it, but that its own weight kept it down.

In answer to the second interrogatory affirmant says, that the hopper machine invented and made by his brother Christian Stouffer was worked with cords as stated in the interrogatory.

In answer to the third interrogatory affirmant says, that there were cross pieces nailed on the under side of the machine by him, before stated to be used to convey, and that it did well convey the flour to the centre, but not exactly like the one made by plaintiff, but answered the same end.

In answer to the fourth interrogatory affirmant says, that the hopper machine, mentioned by him before, was balanced by weights to regulate its motions, and which answered the purpose as well as Mr. Evans' plan.

In answer to the fifth interrogatory affirmant says, that he has seen Oliver Evans—that he never saw him at work at any mill in Lancaster county, that the machine in deponent's mill, which Oliver Evans saw in use and operation, was made exactly in principle with the hopper-boy in Benjamin Chambers' mill, and copied from the one invented and made by his brother Christian Stouffer as aforesaid. That Oliver Evans pestered deponent to purchase the elevators, but did not mention the hopper-boy, and this was after Evans had got his patent. And further saith not

ABRAHAM STOUFFER.

Affirmed and subscribed before me }

11th January, 1806. }

J. MAXWELL.

UNITED STATES, }
District of Pennsylvania, } *Sct.*

I certify the foregoing to be true and faithful copies of the originals, filed and now remaining amongst the records of the Circuit Court of the United States, in and for the District of Pennsylvania, in the third Circuit, in my office.

Witness my hand and the seal of the said Court, at Philadelphia, this twenty-fifth day of November, A. D. 1813, and in the thirty-eighth year of the Independence of the said United States.

D. CALDWELL, *Clk. Circ. Ct.*

No. IV.

To all whom it may concern :

I, Lewis Evans, of Anne Arundle County, in the state of Maryland, aged fifty-two years, do hereby certify that I was employed by Jonathan Ellicott about the year 1785 or 1786 to execute, with the assistance of my brother Joseph Evans, a plan of a spiral screw, which he, Jonathan Ellicott, intended for the purpose of conveying flour in the bottom of a bolting chest from each end thereof to the centre, where the flour was designed to fall through a hole into the flour chest below, that we executed the plan under the direction of Jonathan Ellicott, and found it to answer the purpose completely.

That sometime after, but before the end of the year 1789, Oliver Evans came to Ellicotts' Lower Mills, on Patapsco, when the beforementioned screw was in operation; that Jonathan Ellicott in my presence observed to the said Oliver Evans that his screw would be a valuable appendage to his, Evans's, elevators; that it would supply them with wheat or meal, and thereby enable him to place them in any part of the mill. Upon which he, Jonathan Ellicott, opened the bolting chest for the purpose of shewing the said screw to Oliver Evans, that he, Oliver Evans, on seeing the screw, observed that it was a valuable improvement, and was the very thing which he had been wanting, but heretofore had never been able to discover it, and that it would completely answer the purpose he, Jonathan Ellicott, had described. Oliver Evans further observed, he knew how to convey wheat and flour in a perpendicular direction, but never before knew how to convey it horizontally.

The above is substantially the import of what passed on that occasion, if not the precise words.

LEWIS EVANS.

Sworn and subscribed before me }
the 8th day of December, 1812. }

True copy, OWEN DORSEY.

At the same time, personally appeared John Ellicott, of John, who being duly affirmed, according to law, declared that he was present at the time alluded to, in the above certificate, when the conversation between Jonathan Ellicott and Oliver Evans took place; and that the same is substantially true as therein stated, and that in consequence of Jonathan Ellicott's being the inventor of the application of the screw to the removing of flour, meal and wheat, the said Oliver Evans agreed that the said Jonathan Ellicott should have his permission to use the elevators and hopper-boy in all the mills in which he was interested, during the term of his patent obtained from the State of Maryland; and for which the said Evans gave a permit, under his hand and seal, and the said Jonathan Ellicott agreed on his part, that the said Oliver Evans should have the right and privilege, during the same term, of using his invention of the application of the screw for the above purpose.

Affirmed to before

OWEN DORSEY.

True copy.

To all whom it may concern:

I Joseph Evans, of Baltimore county, in the State of Maryland, aged about fifty-nine years, do hereby certify that Jonathan Ellicott, some time before the year 1785 or 1786, informed me that he had invented several ways of conveying wheat, flour or other substance, in a horizontal, ascending or descending direction, to wit, by means of a spiral screw, by a band revolving round pullies or rollers, with blocks fastened on the band, which he called a drag, or by the substance intended to be removed, falling on the top of a band, revolving on rollers or pullies, which was turned by the gravitation of such substance, which he called a Descender. That in the year 1785 or 1786 I was employed by the said Jonathan Ellicott to execute the plan of a spiral screw for the purpose of conveying flour in the bottom of a bolting chest, from each end thereof to the centre, when the flour was designed to fall through a

hole into the flour chest below, that with the assistance of my brother Lewis Evans we executed the plan under his direction, and found it to answer the purpose completely. That afterwards I executed conveyors for the said Jonathan Ellicott in all the different ways abovementioned, that I have executed for him screws in all the ways I have ever seen since, both with iron and wooden flights, with both broken and continued spires ; that I have never seen any plan of a screw which in my opinion was equal (for the purpose of conveying substances) to the one I first assisted in making.

That I have followed the business of a mill-wright during a considerable part of my life, and have seen I believe screws in all the different modes that have been made.

JOSEPH EVANS.

Affirmed and subscribed to, before me, the subscriber, one of the Justices of the Peace, for Baltimore county, December 8th, 1812.

OWEN DORSEY.

A true copy from the original.

No. V.

*To the Senate and House of Representatives of the
United States.*

The memorial of the snbscriber, an inhabitant of Chester county, Pennsylvania, respectfully represents—That your memorialist has discovered and applied a new, and, as he believes, a very beneficial improvement in the art of milling, by the application of wind to the purpose of conveying wheat and flour from one part of the mill to another ; that the invention is different in principle from any discovery heretofore practised for that purpose ; accomplishing the same end by less complex and expensive means, at the same time relieving the manufacturer from many of the inconveniences and objections that are justly

attributable to the usual method by elevators, conveyors, &c. That your memorialist did, on the fifth day of March, one thousand eight hundred and ten, and on the nineteenth day of June, one thousand eight hundred and twelve, obtain from the patent office of the United States, where his specification is filed and model deposited, a patent, vesting in him the exclusive right to his invention, agreeably to the laws of the United States, in such cases provided, intending to sell the privilege to use said invention at the moderate price of thirty dollars for each mill, a sum that whilst it would not oppress any to pay, would amply remunerate him for all the time and expence employed in bringing to perfection an invention so beneficial to the community. But to the great mortification and disappointment of your memorialist, he finds that neither himself, nor his fellow-citizens, will be permitted to profit by the said improvement, if a certain Oliver Evans should succeed in a suit he has instituted against your memorialist, to recover damages for what he alleges an infringement of his exclusive right to the improvements in the art of milling, granted him by a law of Congress, on the twenty-first day of January, 1808, and which, from late decisions in some of the Courts of the United States, there appears too much reason to fear he will.

Your memorialist, therefore, prays that your honorable body will reconsider the law under which the said Evans claims his monopoly, and grant such relief as you, in your wisdom, may deem proper ; and your petitioner will, &c.

JEREMIAH BAILY.

*East Marlborough, Chester County,
Pennsylvania, December 6th, 1813.*

No. VI.

Mars Works, Philadelphia, Oct. 18, 1811.

SIR—I send you this to let you know that my patent cannot be evaded, more especially by the means you publish in your advertisement, of your patent wind machine, dated Sept. 7th; the principles of which I have known, and been well acquainted with ever since about the year 1787 or 1788, twenty-three years. If you wish to know who invented it so long ago, enquire of Mr. Jonathan Ellicott.

If you do not publish a counter advertisement, declaring that you will not put your machine into operation, having found that to be an infringement of my patent, and let me know it before I commence a suit against you, I will try what damages I can recover of you (and of every one who may use your machine) for the infringement; for I do assure you that I cannot believe that you were actuated by that laudable desire of making a useful improvement, because there was no need thereof; all that was necessary in the case was already discovered and in use; but by a sordid and unjust desire to deprive me of my just rights, and which I hope to be able to prove to any Court and Jury and to recover ample damages for the injury you have already done me and the millers also, by keeping them in suspense, expecting to get of you, perhaps, at a cheaper rate a license to use the principles of the improvement which I have patented, and which is so beneficial to them, and for which I have not yet charged more than three dollars for every \$100 they may gain by their use. I candidly send you a copy of my patent that you may shew it to your counsel and take advice on it.

Sir, your obed't ser't,

OLIVER EVANS.

Mr. Jeremiah Baily.

No. VII.

Mr. Thomas Ellicott.

SIR—Notice is hereby given you, that the following Act has been passed by Congress :

An Act for the relief of Oliver Evans.

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That it shall and may be lawful for the Secretary of State, on application in writing by Oliver Evans, to cause letters patent to be made out in the manner and form prescribed by the act entitled, "An act to promote the progress of useful arts, and to repeal the act heretofore made for that purpose," thereby granting to said Oliver Evans, his heirs, executors, administrators and assigns, for a term not exceeding fourteen years, the full and exclusive right and liberty of making, constructing, using, and vending to be used, his invention, discovery and improvements in the art of manufacturing flour and meal, and in the several machines, which he has discovered, invented, improved and applied to that purpose : Provided, That no person who may have heretofore paid the said Oliver Evans for license to use the said improvements shall be obliged to renew said license, or be subject to damages for not renewing the same : And provided also, That no person who shall have used the said improvements, or have erected the same for use, before the issuing of the said patent, shall be liable to damage therefor.

J. B. VARNUM,

Speaker of the House of Representatives.

GEO. CLINTON,

Vice-President of the United States,

And President of the Senate.

APPROVED,

TH: JEFFERSON.

January 21, 1808.

On the 22d day of January, 1808, Letters Patent were granted to Oliver Evans, pursuant to the above recited

E

act, securing to him an exclusive right in his original improvements in the art of manufacturing flour and meal, and in the several machines which he has invented or improved, and applied to that purpose, viz. his improved Elevator, Conveyor, Drill, Hopperboy, and Kiln-drier.

You are therefore hereby requested to pay for license to use those of his improvements which you have in use in your mills situate on Gwynn's Falls, in the County of Baltimore, in the State of Maryland, at the following rates for the whole, exclusive of the Kiln-Drier.

The price of license for the whole patent term is the sum which is saved by their use in the expense of labour only for one year,—estimating the wages and boarding of a miller at 300 dollars per year, and allowing that for every 20 barrels of flour the mill will manufacture in 24 hours one hand is saved, or 300 dollars a year, which is equal to 15 dollars for each barrel manufactured in one day. Therefore multiplying the number of barrels the mill will manufacture in one day by 15, gives the price of license for the whole patent term. Supposing the mill to run 200 days per year.

| | | | |
|-----------------------------|------------------|---------|---------|
| Mill-stones 7 feet diameter | will manufacture | 49 bls. | pr. day |
| 6 feet 6 inches | ditto | 42 | ditto |
| 6 feet | ditto | 36 | ditto |
| 5 feet 6 inches | ditto | 30 | ditto |
| 5 feet | ditto | 25 | ditto |
| 4 feet 6 inches | ditto | 20 | ditto |
| 4 feet 3 inches | ditto | 18 | ditto |
| 4 feet | ditto | 16 | ditto |

Your mill runs two pair of 7 feet stones at a time, and will manufacture ninety-eight barrels of flour in twenty-four hours, which, multiplied by 15, amounts to \$1470, saved to you in wages and boarding of millers each year, if you use the whole. This sum with interest on it until paid, counting from the time you began to use the improvements, within my patent term, is demanded for license to use the whole, excepting the Kiln-drier.

But after the expiration of sixty days from the delivery of this notice, if license be not purchased, an additional demand will be made of the interest on the whole sums saved

you, in the wages and boarding of millers, as it accumulates, until license be purchased, counting from January 22d, 1813.

That is, you now owe me \$1470 with 5 2-3 years interest, next year you will owe me the same sum with 6 2-3 years interest, and the interest on \$1470 saved in that year and so on. The whole sum thus saved hereafter, goes on interest until you purchase license. You are allowed to retain the principal, paying interest thereon for the future use of the improvements until you purchase license.

But if you now choose to quit the use of them, and pay interest only up to the present time, it will be received in full payment for their past use. But if you refuse to comply with either of those terms suit will be commenced immediately.

If any circumstance exist to entitle you to a deduction, it will be made accordingly.

Elevating and conveying grain is deemed one-third part of the whole improvement.

Elevating and conveying meal one-third part.

Cooling the meal and attending the bolting hopper one-third part.

The price of license to use one-third part is half the price for the whole.

The price of two third parts is three-fourths of the price for the whole.

You use the whole improvements excepting the Kiln-drier, and the price of license is \$1,470, with the interest, from 22d January, 1808, the date of my present patent, until paid.

Those who have used my improvements to two pair of six feet stones, making 72 barrels of flour per day, have saved in wages and boarding of millers, 1080 dollars per year, which for five years expired of my patent term, is

\$5400 00

Seventy-two barrels per day, for only 200 days per year, is 14,400 barrels per year, which at 50 cents gain each barrel (as was proved by the witnesses in the late trials at Balti-

more, to be gained by making more and better superfine flour) is 7200 dollars per year, which for five years is 36,000 00

Total gained in five years \$41,400 00

This calculation is made to show you, that you have gained enough already to enable you to pay for license, and to entitle me to my demand, even supposing your mill to work but two thirds of each year.

OLIVER EVANS.

Delivered to on the day of request-
ing him to call on Nathaniel Williams, agent for Oliver
Evans, for license.

The price of 98 barrels per day, multiplied by
\$15, is \$1470 00

Interest, from 22d January, 1808, up to Oc-
tober 22d, 1813, being five years and
nine months—is 517 15

Interest on \$1470, to be saved this year in la-
bour, for nine months past, counting up to
22d October, is 66 15

\$2053 30

No. VIII.

*Report of the committee, to whom were referred the memo-
rials of John Worthington, and others, and Oliver
Evans.*

In Senate of the United States, Feb. 22d, 1813.

Mr. Bayard, from the committee to whom were refer-
red the memorials of John Worthington and others, and
of Oliver Evans,

REPORTED :

That the subject of the memorials is of considerable
interest and importance to the community, and involves

difficulties which would require more time and patient investigation fully to understand, than can be bestowed upon it during the remnant of the present session.

The committee confine themselves to stating, that the grievance complained of by the memorialists first mentioned, proceeds from an act of Congress, passed the 21st day of January in the year 1808, whereby a patent which had before that time been granted to Oliver Evans, for fourteen years, for certain mill machinery, and which had expired by its own limitation, was renewed and continued for fourteen years from the date of the act. It appears that in the interval between the expiration and renewal of the patent, several grist mills were erected, into which the use of Mr. Evans' machinery was introduced.

By a judicial construction of the act of Congress, it is held to prohibit the use of the machinery after the passing of the act, without the licence of the patentee, although the mill and machinery were constructed when no patent or exclusive right existed.

It also appears that the price at which Mr. Evans rated his licenses before the act of 1808, for one water wheel, was from 30 to 40 dollars.

Since that act, his prices has been gradually augmented, and he now requires from 3 to 400 dollars, for the machinery used in the manufacture of flour, by each pair of stones of six feet diameter.

In a single mill having several pair of stones, a demand was made of 2,200 dollars for the use of the machinery.

The machinery is undeniably of great importance to the public, but the increased and increasing prices of the patentee, threaten the imposition of an intolerable burthen upon a very useful and important class of manufacturers.

The committee are not prepared to recommend any specific relief in the case, and conceiving that it deserves more attention than it can receive during the present session, consider that it would be adviseable to abstain from acting upon the subject at this time, and to leave it to the maturer consideration of the ensuing Congress. The following resolution is submitted :

Resolved, That the committee to whom were referred the memorials of John Worthington, and others, and of Oliver Evans, be discharged from the further consideration of the subject of the said memorials.

No. IX.

We whose names are hereunto subscribed being either practical millers or experienced in the manufacture of flour, having seen several statements made by Oliver Evans, tending to induce a belief that a much greater quantity of flour can be made from any given quantity of wheat, by the use of certain machinery, for which he has obtained a patent, than can otherwise be made—and being called on to state our opinions on the subject, we do hereby declare that from experience, we are of opinion that the machinery known by the name of Evans' machinery, *is only calculated to save manual labour*. In its application it merely conveys, in the first place, the wheat to the mill stones, where it is ground, and afterwards the meal to the bolting reel, where the flour and bran are separated, this is the whole agency this machinery has in the manufacture of flour, therefore the mill stones and bolting cloths being the only agents in separating from each other the constituent parts of the wheat, to wit, the flour and bran, it is evident, that if the wheat is introduced to the one, and the meal to the other, the means used to accomplish it, can make no difference in the quantity of flour that will be produced.

We do therefore without hesitation say that as great a quantity of flour of equal quality can be made from any given quantity of wheat without the use of the said machinery as can possibly be made with it.

JAMES OGLEBY,
SAM'L BYRNES,
WM. EVANS,
SHEPPARD & M'CONKY,
JOSEPH SCOTT.

Baltimore, December 10th, 1813,

The names hereunto affixed are respectable millers, and men of integrity, veracity and honour in the city of Baltimore, whose declarations and signatures deserve to be received as coming from the best source of information on the subject alluded to.

EDWD. JOHNSON,
Mayor of the City of Baltimore.

No. X.

King William County, (Va.) to wit:

*before me I
to have &c.*

I hereby certify, that Charles Lathom, personally appeared before me the subscriber, a magistrate of the county above mentioned, on the 9th day of December, 1813, and made oath to the two following interrogatories, touching the matters therein contained, the answers which appear below :

1st. Interrogatory.—At what time did Major Martin first invent, construct, or use the drill-plough ?

2d. Interrogatory.—Did the said plough contain an elevator, and, if so, of what materials was the elevator constructed—was the strap revolving round rollers made of leather, or what other substance : and of what materials were the buckets attached to the strap composed ?

To the 1st. interrogatory the said Charles Lathom answereth, that the said Major Martin first invented, constructed, or used the drill-plough, with elevators confined to a roller of about three inches in diameter, in the year 1777, or 1778 at all events.

To the 2d. interrogatory the said Charles Lathom answereth that an elevator was used, constructed by the application of tin buckets to a wheel at the time above-mentioned, to wit, 1777 or 1778. Afterwards the said plough contained an elevator, which was constructed of a leather strap, to which was fixed cups or buckets, which appeared to the witness to be cast of lead or pewter. The said cups or buckets were of the shape of a thimble, or of the

cup of an acorn ; revolving around two rollers of wood with an iron axle, which rollers were of about three inches in diameter, and six inches asunder. The distance of the elevators from each other, depended upon the size of the wheel that ran upon the ground and turned them. The said cups or buckets were of a size large enough to carry about three grains of Indian corn, or five of black-eyed peas. The time when the said elevator was used, was in or before the year 1782, as the witness is fully persuaded he then saw it.

JOHN ROANE.

State of Virginia,

King William County, to wit :

I Robert Pollard, Clerk of the county aforesaid, do hereby certify, that John Roane, Esquire, whose hand is affixed to the foregoing affidavit, is a magistrate of the county of King William, and that due faith and credit ought to be paid to all his acts and deeds as such.

In testimony whereof I have hereunto set my hand and caused the seal of my office to be hereunto affixed, this 11th day of December, 1813, in the 38th year of the Commonwealth.

ROBERT POLLARD, C. C.

State of Virginia,

King William County, to wit :

I Christopher Tompkins, presiding justice of the peace, in and for the county aforesaid, do certify, that Robert Pollard, whose certificate is hereunto annexed, is Clerk of the Court of said county, and that his said certificate is in due form of law, and that due faith and credit is and ought to be given to all his official acts as well in courts of judicature as thereout. Given under my hand, this 11th day of December 1813, in the 38th year of the Commonwealth.

CHRISTOPHER TOMPKINS.

No. XI.

King William County, (Va.) to wit:

I hereby certify that Mildred Martin personally appeared before me the subscriber, a magistrate of the county abovementioned, on the 9th day of December, 1813, and made oath to the two following interrogatories, touching the matters therein contained, the answers to which appear below :

1st Interrogatory.—At what time did Major Martin first invent, construct or use the drill plough ?

2d. Did the said plough contain an elevator, and if so, of what materials was the elevator constructed—was the strap revolving round rollers made of leather, or what other substance—and of what materials were the buckets, attached to the strap, composed ?

To the 1st interrogatory the said Mildred Martin answereth that she was married in the year 1781 to Major Thomas C. Martin, and in the spring of the year following, to wit, 1782, her late husband, the aforesaid Thomas C. Martin, planted a crop of Indian corn, as she believes, with a drill-plough, which will be mentioned more at large in her answer to the second interrogatory abovementioned. To the first abovementioned interrogatory, she farther answereth she has no doubt but the same plough was used in 1782, but how much earlier, or when the said Thomas C. Martin first invented, constructed, or used the said drill plough, she does not know.

To the second Interrogatory the said Mildred Martin answereth that the said drill-plough did contain an elevator of which the following is the description : two rollers, one fixed over the other, around which a leather strap was passed, about one and half inches broad, and twenty inches long, to which small tin cups or buckets of a size to contain two or three grains of Indian corn were fastened—the beforementioned strap passed through a hopper or box containing the corn, and the corn was dropped from the tin cups or buckets, as the strap passed over the upper roller—the rollers received their motion from a

wheel fixed to the plough, and communicated the motion to the leather strap. Given under my hand this 9th day of December, 1813.

WALKER HAWES.

State of Virginia,

King William County, to wit:

I Robert Pollard, clerk of the county aforesaid, do hereby certify that Walker Hawes, esqr. whose hand is affixed to the foregoing affidavit, is a magistrate of the County of King William, and that due faith and credit ought to be paid to all his acts and deeds as such.

In testimony whereof, I have hereunto set my hand and caused the seal of my office to be hereunto affixed, this 11th day of December, 1813, in the 38th year of the Commonwealth.

ROBERT POLLARD, C. C.

State of Virginia,

King William County, to wit:

I Christopher Tompkins, presiding justice of the peace in and for the county aforesaid, do certify that Robert Pollard, whose certificate is hereto annexed, is clerk of the Court of said county, and that his said certificate is in due form of law, and that due faith and credit is and ought to be given to all his official acts, as well in Courts of Judicature as thereout. Given under my hand this 11th day of December, 1813, in the 38th year of the Commonwealth.

CHRISTOPHER TOMPKINS.

Subjoined is a copy of the specification filed in the office of the Secretary of State, upon which Oliver Evans obtained a renewal of his patent.

To all to whom these presents shall come, greeting :

I certify, That the annexed is a true copy of a Specification of inventions and improvements in the process of the art of manufacturing flour or meal, for which Oliver Evans obtained a patent, January 22d, A. D. 1808.

In faith whereof, I James Monroe, Secretary for the Department of State of the United States of America, have signed these presents, and caused the seal of my office to be affixed hereto, at the city of Washington, this twentieth day of November, A. D. 1812, and in the thirty-seventh year of the Independence of the said states.

JAS. MONROE.

SPECIFICATION

Of Oliver Evans's inventions of improvements in the process of the art of manufacturing grain into flour or meal ; and for other purposes.

My first principle is to elevate the meal as fast as it is ground, in small separate parcels, in continued succession and rotation, to fall on the cooling floor, to spread, stir, turn and expose it to the action of the air, as much as possible, and to keep it in constant and continual motion, from the time it is ground, until it be bolted ; this I do to give the air full action, to extract the *superfluous moisture* from the *meal*, while the heat generated by the friction of grinding, will repel and throw it off, and the more effectually *dry* and *cool* the meal fit for bolting in the course of the operation, and save time and expence to the miller.— Also to avoid all danger from *fermentation* by its laying warm in large quantities as is usual ; and to prevent *insects* from depositing their *eggs* which may breed the worms often found in good flour. And further to complete this principle, so as to dry the meal more effectually, and to cause the flour to keep sweet a longer space of time, I mean to increase the heat of the meal as it falls

ground from the mill stones by application of heated air, that is to say, I *kiln-dry* the meal as it is ground instead of kiln-drying the grain as usual. The flour will be fairer and better than if made from kiln-dried grain, the skin of which is made so brittle, that it pulverizes and mixes with the flour. This principle I apply by various machines which I have invented, constructed and adapted to the purposes hereinafter specified, numbered 1, 2, 3, 4, 5.

My second principle is to apply the power that moves the mill or other principal machine to work my machinery, and by them to perform various operations, which have always heretofore been performed by manual force, and thus greatly to lessen the expence and labour of attending mills and other works.

The application of these principles, including that of kiln-drying the meal, during the process of the manufacture or otherwise to the improvement of the process of manufacturing flour and for other purposes, is what I claim as my invention and improvement in the art, as not having been known or used before my discovery, knowing well that the principles once applied by one set of machinery to produce the desired effect, others may be contrived and variously constructed, and adapted to produce like effects in the application of the principles, but perhaps none to produce the desired effect more completely than those which I have invented and adapted to the purposes, and which are hereinafter specified.

No. 1.

THE ELEVATOR—Its use is to elevate any grain, granulated or pulverized substances. Its use in the manufacture of flour or meal, is to elevate the meal from the mill stones, in small separate parcels, and to let it fall through the air on the cooling floor as fast as it is ground. It consists of an endless strap, rope or chain, with a number of small buckets attached thereto, set to revolve round two pullies, one at the lowest, and the other at the highest point between which the substance is to be raised,

these buckets fill as they turn under the lower, and empty themselves as they turn over the upper pully ; the whole is enclosed by cases of boards to prevent waste.

No. 2.

THE CONVEYER.—Its use is to convey any grain granulated or pulverized substances, either in a horizontal ascending or descending direction. Its use in the process of the art of manufacturing flour, is to convey the meal from the mill-stones as it is ground, to the elevator, to be raised and to keep the meal in constant motion, exposing it to the action of the air ; also in some cases to convey the meal from the elevator to the bolting-hopper, and to cool and dry it fit for bolting, instead of the hopper-boy, No. 3 ; also to mix the flour after it is bolted ; also to convey the grain from one machine to another, and in this operation to rub the impurities off the grain. It consists of an endless screw, set to revolve in a tube or section of a tube, receiving a substance to be moved at one end, and delivering it at the other end ; but for the purpose of conveying flour or meal, I construct it as follows : instead of making a continued spiral, which forms the endless screw, I set small boards called flights at an angle crossing the spiral line, these flights operate like so many ploughs following each other, moving the meal from one end of the tube to the other, with a continued motion turning and exposing it to the action of the air to be cooled and dried ; sometimes I set some of the flights to move broadside foremost, to lift the meal from one side, to fall on the other, to expose it to the air more effectually.

No. 3.

THE HOPPER-BOY—Its use is to spread any grain, granulated or pulverized substances over a floor or even surface, to stir and expose it to the air, to dry and cool it when necessary, and at the same time, to gather it from the circumference of the circle it describes, to or near the centre, or to spread it from the centre to the circumference, and to leave it in the place where we wish it to be delivered,

when sufficiently operated on. Its use in the process of manufacturing flour, is to spread the meal as fast as it falls from the elevator over the cooling floor on the area of a circle of from eight to sixteen feet, more or less, diameter, according to the work of the mill, to stir and turn it continually, and expose it to the action of the air, to be dried and cooled, to gather it into the bolting-hoppers, and to attend the same regularly. It consists of an upright shaft made round at the lower end, about two thirds of its length, and set to revolve on a pivot in the centre of the cooling floor; thro' this shaft, say five feet from the floor is put a piece called the leader, and the lower end of the shaft passes very loosely through a round hole, in the centre of another piece, called the arms, say from eight to sixteen feet in length, this last piece revolving horizontally describes the circle of the cooling floor, and is led round by a cord, the two ends of which are attached to the two ends of the arms, and passing through a hole at each end of the leader, so that the cord will reeve to pull each end of the arms equally. The weight of the arms is nearly balanced by a weight hung to a cord, which is attached to the arms, and passes over a pulley near to the upper end of the upright shaft, to cause the arms to play lightly, pressing with only part of their weight on the meal, that may be under it. The foremost edges of the arms are sloped upwards, to cause them to rise over and keep on the surface of the meal as the quantity increases, and if it be used separately and unconnected with the elevator, the meal may be thrown with shovels, within its reach while in motion, and it will spread it level and rise over it until the heap be four feet high or more, which it will gather into the hoppers, always taking from the surface, after turning it to the air a great number of times.— The underside of these arms, are set with little inclining boards, called flights, about four inches apart, next the centre, and gradually closing to about two inches next the extremities, the flights of the one arm to tract between those of the other, they operate like ploughs, and at every revolution of the machine they give the meal two turns towards the centre of the circle, near to which is generally the bolting-hopper. At each extremity of the arms there is a little board attached to the hindmost edge of the

arm to move side foremost ; these are called sweepers, their use is to receive the meal as it falls from the elevator, and trail it round the circle described by the arms that the flights may gather it towards the centre, from every part of the circle ; without these, this machine would not spread the meal over the whole area of the circle described by the arms ; other sweepers are attached to that part of the arms which pass over the bolting-hoppers to sweep the meal into them.

But if the bolting hoppers be near a wall, and not in the centre of the cooling floor, then in this case the extremity of the arms are made to pass over them, and the meal from the elevator let fall near the centre of the machine, and the flights are reversed to turn the meal from the centre towards the circumference, and the sweepers will sweep it into the hoppers. Thus this machine receives the meal as it falls from the elevator on the cooling floor, spreads it over the floor, turns it twice over at every revolution, stirs and keeps it in continual motion, and gathers it at the same operation into the bolting hoppers and attends them regularly. If the bolting reels are stopped this machine spreads the meal and rises over it, receiving under it from one, two or three hundred bushels of meal, until the bolts are set in motion again, when it gathers the meal into the hoppers, and as the heap diminishes it follows it down until all is bolted. I claim as my invention the peculiar properties or principles which this machine possesses, viz. The spreading, turning and gathering the meal at one operation, and the raising and lowering of its arms by its motion to accommodate itself to any quantity of meal it has to operate on.

No. 4.

THE DRILL.—Its use is to move any grain, granulated or pulverized substances, from one place to another ; it consists, like the elevator, of an endless strap, rope or chain, &c. with little rakes instead of buckets (the whole cased with boards to prevent waste) revolving round two pulleys or rollers. Its use in the process of the

manufacture of flour, is to draw or rake the grain or meal from one part of the mill to another, it receives it at one pully and delivers it at the other, in a horizontal, ascending or descending direction, and in some cases may be more conveniently applied for that purpose than the conveyor.*

I claim the exclusive right to the principles and to all the machines above specified, and for all the uses and purposes specified as not having been heretofore known or used before I discovered them. They may all be united and combined in one flour mill to produce my improvement on the art of manufacturing flour complete, or they may be used separately for the purposes specified and allotted to them or to produce my improvement in part, according to the circumstances of the case.

No. 5.

THE KILN-DRYER.—To kiln-dry the meal after it is ground and during the operation of the process of manufacturing the flour. I take a close stove of any common form and enclose it with a wall made of the best non-conductor of heat, leaving a small space between the stove and the wall, to admit air to be heated in its passage through this space; I set this stove below the conveyor that conveys the meal from the mill stones as ground into the elevator, and I connect the space between the stove and the wall to the conveyor tube by a pipe entering near the elevator, and I cover the conveyor close and set a tube to rise from the end of the conveyor tube near the mill-stones for the heated air to ascend and escape as up a chimney; I make fire in the stove and admit air at the bottom of the space between it and the wall round it to be heated and pass along the conveyor tube, meeting the meal which will be heated by the hot air and the superfluous moisture will be more powerfully repelled and thrown off, and the meal will be dried and cooled as it passes through the operation of

* This machine was invented, applied and shown, in operation, to Oliver Evans, at Ellicott's mills, on Patapsco, about the year 1786. It was then called a drag.

the elevator and hopper-boy. The flour will be fairer than if the grain had been kiln-dried, and it will keep longer sweet than flour not kiln dried.

I set all my machines in motion by the common means of cog and round, tooth and pinion, straps, ropes or chains, well known to every mill wright.

ARRANGEMENT and CONNECTION of the several machines so as to apply my principles to produce my improvements complete.

I fix a spout through the wall of the mill for the grain to be emptied into from the waggoner's bag to run into a box hung at the end of a scale beam to weigh a waggon load at a draught. From this box it descends into the grain elevator which raises it to a granary over the cleaning machines, and as it passes through them it may be directed into the same elevator to ascend to be cleaned a second time, and then descend into a garner over the hopper of the mill stones to supply them regularly, and as ground it falls from the several pair of mill stones into the conveyors where it is dried by the heated air of the kiln-dryer, and is conveyed into the meal elevator to be raised and dropped on the cooling floor, within reach of the hopper-boy, which receives and spreads it over the whole area of the circle which it describes, stirring and turning it continually and gathering it into the bolting hoppers, which it attends regularly. That part of the flour which is not sufficiently bolted by the first operation is conveyed by a conveyor or drill into the elevator to ascend with the meal to be bolted over again, and that part of the meal which has not been sufficiently ground at the first mill stone to be ground over.

Thus the whole of the operations which used to be performed by manual labour is from the time the wheat is emptied from the waggoner's bag, or from the ship's measure until it enters the bolts, and the manufacture be completed in the most perfect manner, performed by the machinery moved by the power which moves the mill, and this machinery keeps the meal in constant motion during the whole process, drying and cooling it more completely, avoiding all danger from fermentation and preventing in-

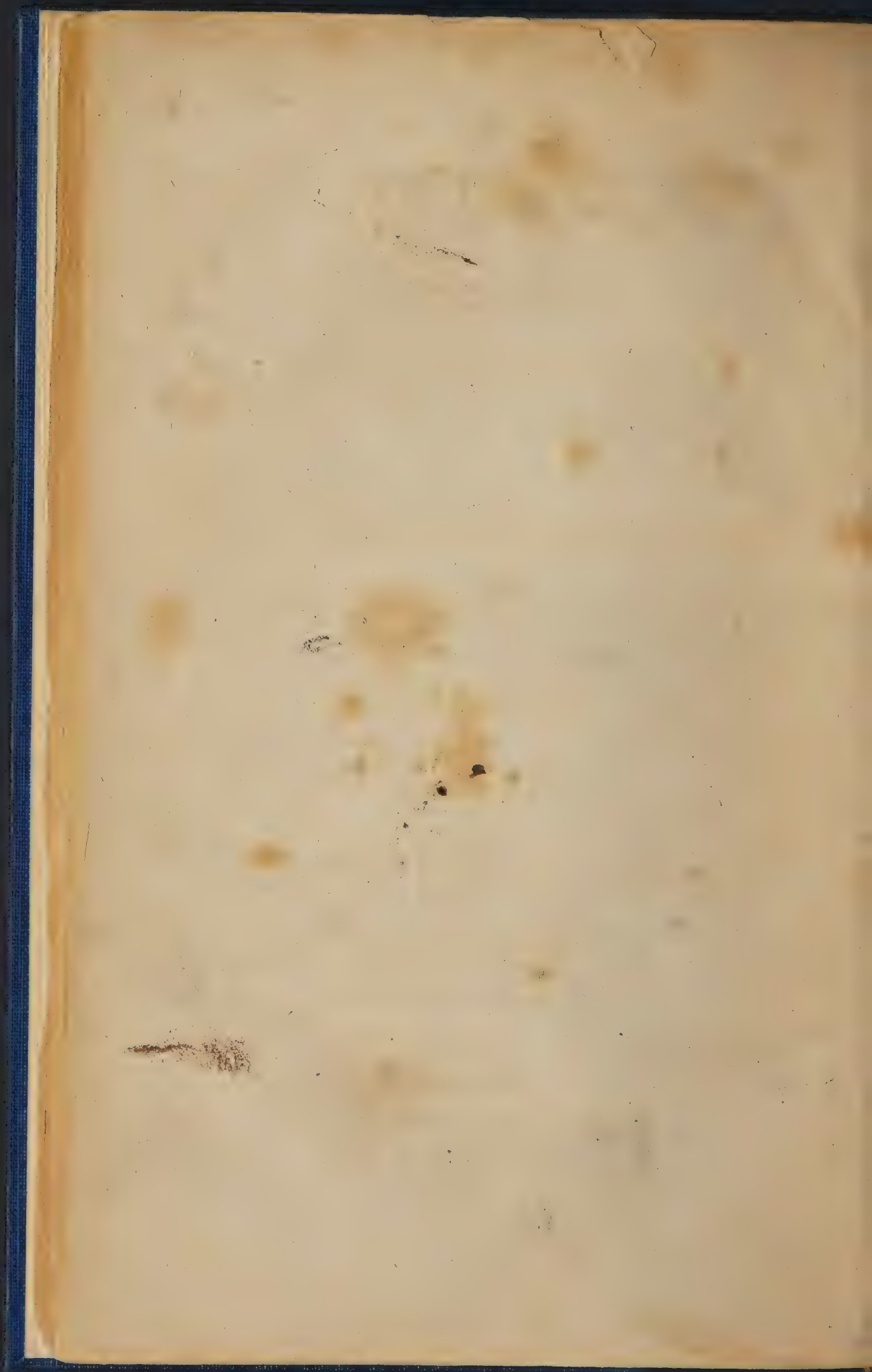
sects from depositing their eggs, and performing all the operations of grinding and bolting to much greater perfection, making the greatest possible quantity of the best quality of flour out of the grain, saving much time and labour and expence to the miller and preventing much from being wasted, the motions of the machines being so slow as to cause none of the flour to rise in form of dust and be carried away by the air, and the cases of the machines being made close prevents any from being lost.

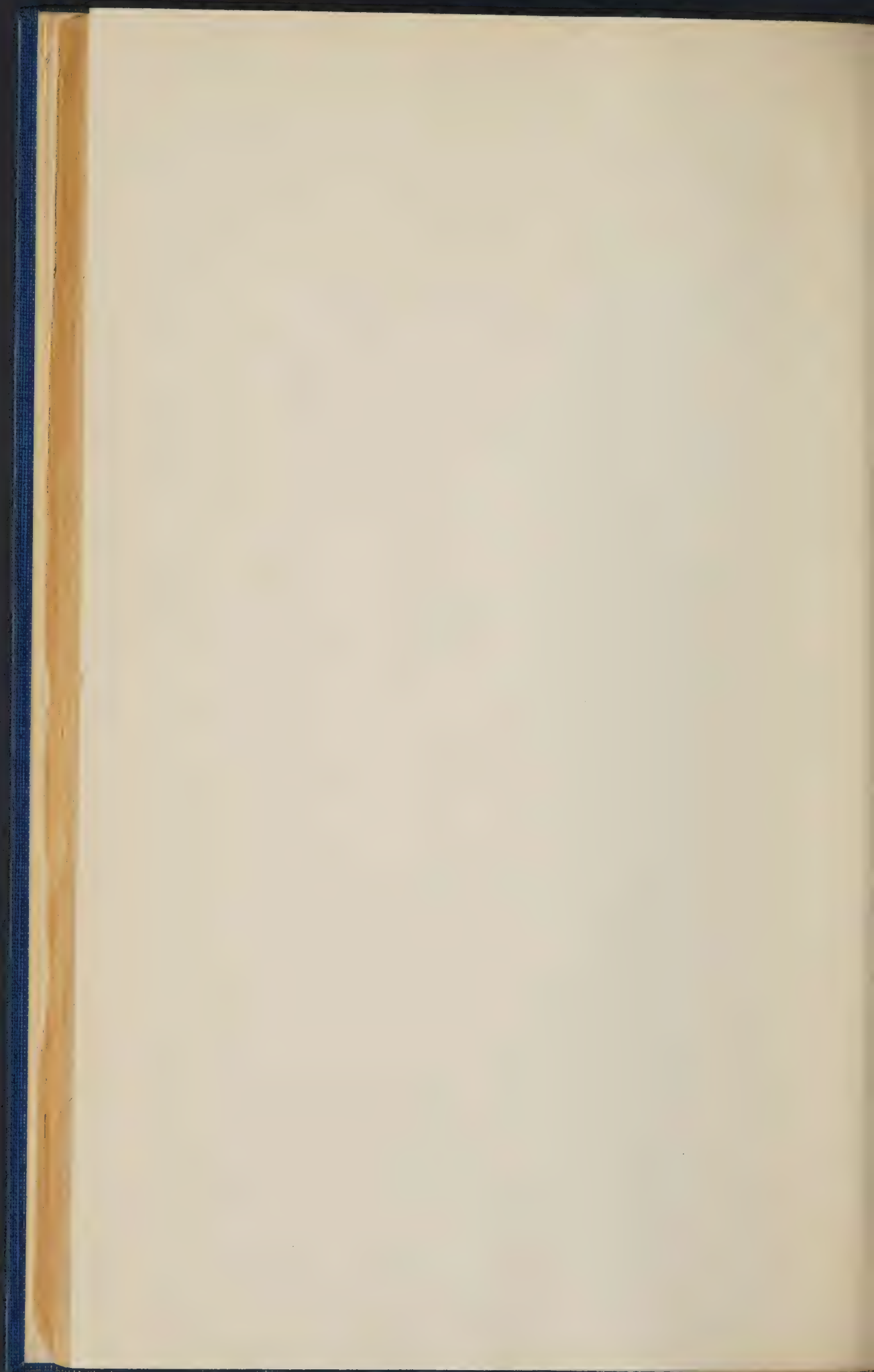
OLIVER EVANS.

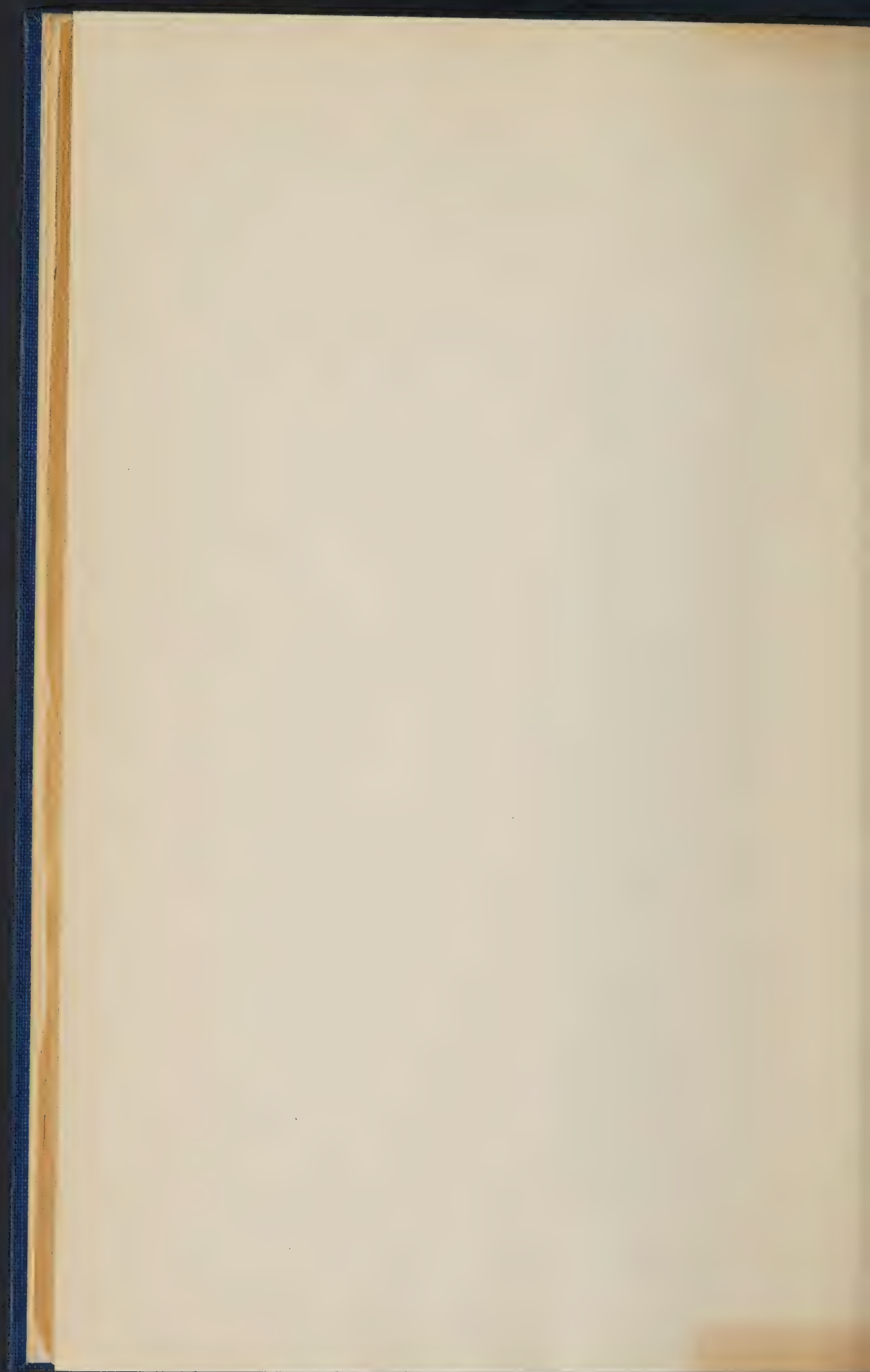
Witnesses,

SAM'L H. SMITH,
JOS. GALES, jun'r.

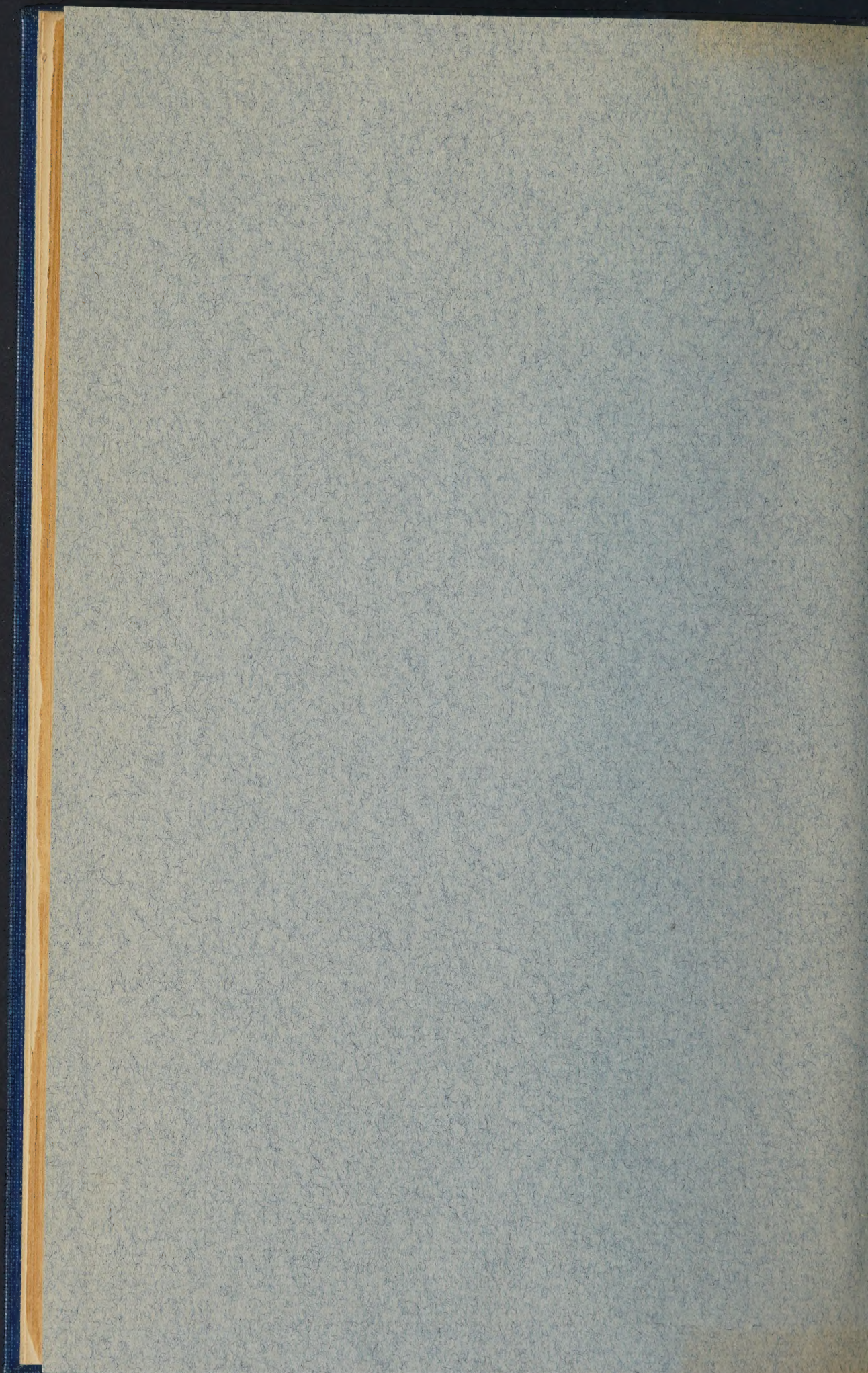








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